Module 1 SE

1. Explain in your own words what a program is and how it functions.

Ans. Program is a set of instructions instructed by user. Projects, Ideas, Roadmap, Blueprint, etc.

1. What are the key steps involved in the programming process?

Ans. The key steps involved in the programming process is problem definition, solution, coding, testing and maintenance. Types of programming: Low level and high-level language.

1. What are the main differences between high-level and low-level programming languages?

Ans. High level language are easy to use, understandable, readable, and platform independent. Low level language are closer to machine code, more difficult to understand.

1. Describe the roles of the client and server in web communication.

Ans. Clients requests for resources from servers. And Servers fulfil their requests.

1. Explain the function of the TCP/IP model and its layers.

Ans. TCP/IP is a also call a Protocol Suit, It is also a design framework that how devices communicate over a network.

1. Explain Client Server Communication Types of Internet Connections.

Ans. Client computers request to get resources from servers. Common types of Internet connections are Satellite, broadband, DSL.

1. How does broadband differ from Fiber-optic internet?

Ans. It is a general type of high-speed network access; Fiber optic internet is a specific type of broadband that uses light to transmit.

1. What are the differences between HTTP and HTTPS protocols?

Ans. Hypertext Transform Transmits Protocol data in plain, make it vulnerable to interception and interpretation. Hypertext Transform Transmits Protocol Security is a secure version of HTTP that encrypts end to end data secure.

1. What is the role of encryption in securing applications?

Ans. It protects the both stored and transmitted data. It also converts into readable and unreadable data.

1. What is the difference between system software and application software?

Ans. System software manages computer hardware and provides other platforms for other software and etc., and application software perform specific tasks given by user.

1. What is the significance of modularity in software architecture?

Ans. Promotes flexibility, reusability of code, maintainability, and development of code, etc.

1. Why are layers important in software architecture?

Ans. They promote modularity, maintainable, building robust, manageable units.

1. Explain the importance of a development environment in software production.

Ans. It provides safe controlled, and developers to build, test, and implement, and refine software without affecting live users or developers.

1. What is the difference between source code and machine code?

Ans. Source code is made up from human readable programming language, machine code is a low-level code that computer directly understands the codes.

1. Why is version control important in software development?

Ans. It enables team to track changes to code over time. Manage different ways of projects, etc.

1. What are the benefits of using Github for students?

Ans. It is an application for using professional tools, opportunities from learning, build portfolio, etc.

1. What are the differences between open-source and proprietary software?

Ans. Open-source software has available source code, allowing users to modify, distribute. Proprietary software has a secret source code, and its use is governed by specific licensing agreements that restrict modification, distribution, and access.

1. How does GIT improve collaboration in a software development team?

Ans. Providing a structured way to manage code changes, enabling parallel work, and facilitating code review.

1. What is the role of application software in businesses?

Ans. It enhances the productivity, automating tasks, collaboration, and decision making.

1. What are the main stages of the software development process?

Ans. Planning, Analysis, Design, Development, Testing, Deployment, and Maintenance.

1. Why is the requirement analysis phase critical in software development?

Ans. It ensures that the software being developed accurately reflects the needs and expectations of stakeholders, minimizes costly errors.

1. What is the role of software analysis in the development process?

Ans. Understanding the software system by analysing and defining the requirements of software system before coding begins.

1. What are the key elements of system design?

Ans. Key elements of system design are architect, dataflow, performance, maintainability, APIs and database design.

1. Why is software testing important?

Ans. Quality of products meets by user and expectations, minimum risks, and reducing long term costs.

1. What types of software maintenance are there?

Ans. There are four types of software maintenance: - perfective, adaptive, corrective, and preventive.

1. What are the key differences between web and desktop applications?

Ans. Web applications are use in website; they don’t need any installation. Desktop applications are pre-installed and run directly.

1. What are the advantages of using web applications over desktop applications?

Ans. They are accessible, easy to use, ease of updates, it can be access from web browsers. It only run through internet connections.

1. What role does UI/UX design play in application development?

Ans. Its easy to use, leading to user satisfaction and engagement. Improving visual appearance, positive brand conception, competitive advantage.

1. What are the differences between native and hybrid mobile apps?

Ans. Native and hybrid mobile apps differ in performance, development, approach, user experience and cost. Development like OS versions, new design, increase costing, etc.

1. What is the significance of DFDs in system analysis?

Ans. Data Flow Diagram are crucial in system analysis for their ability to represents how data moves through a system helping from processor, it improves performance, data stability, no lag, etc.

1. What are the pros and cons of desktop applications compared to web applications?

Ans.  Desktop apps excel in performance, offline, and access to device resources, while web apps use in accessibility, ease of updates, and cross-platform compatibility.

1. How do flowcharts help in programming and system design?

Ans. Flowcharts are use for decision making from two paths. We have to use our logic and make a perfect decision, understand the concept, it makes easy to understand.